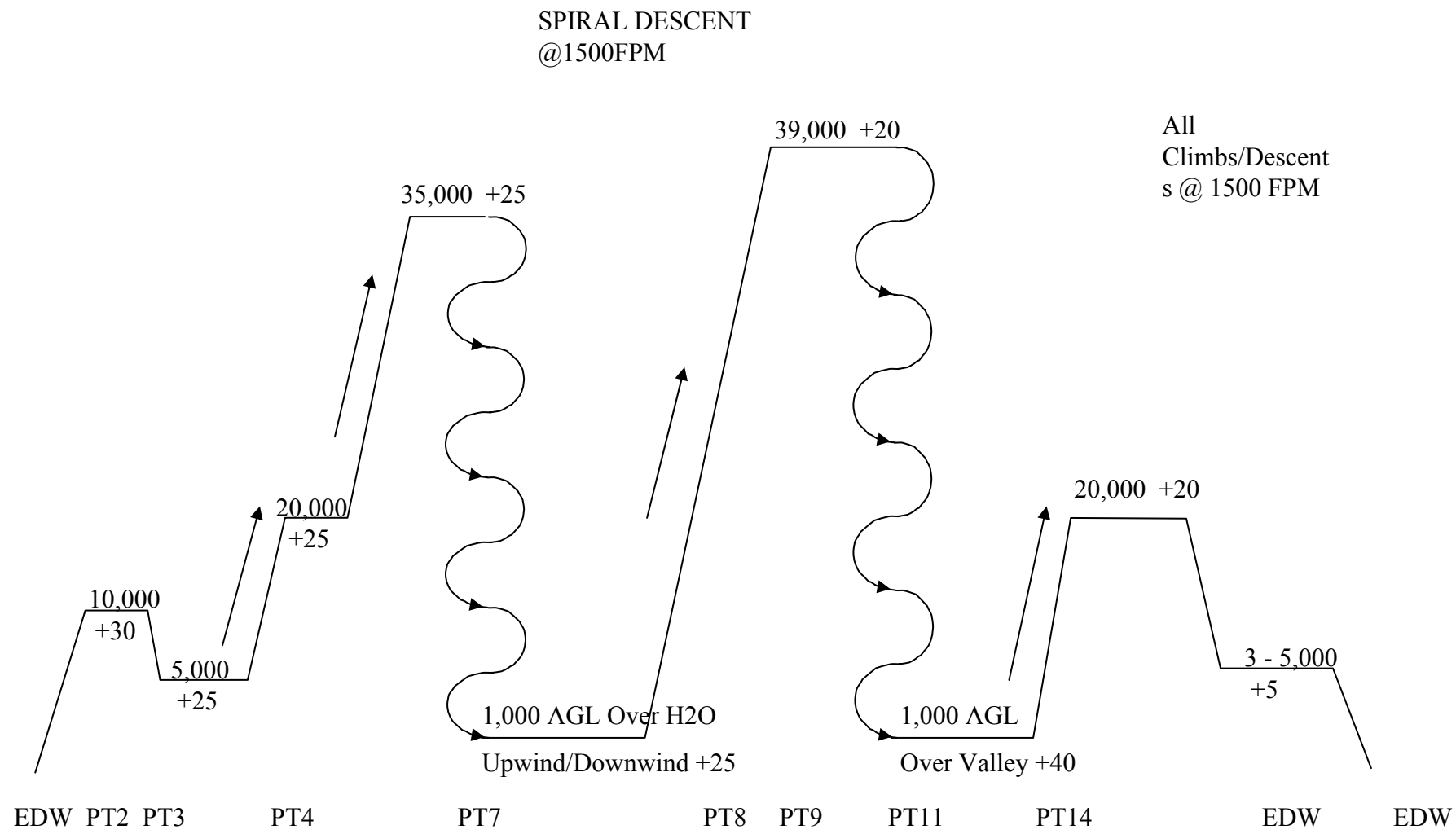
INTEX-A: Test flight 2 (June 29, 2004; Tuesday)

This was the second INTEX-A flight with the main goal of testing instrument performance along with achieving limited science objectives. Total flight duration was 6.2 hours with a 10 am takeoff. Basic flight patterns and there location are shown in the slides below. We flew up the California coast and encountered low level pollution outflow from the south easterly direction. After an in progress climb to 35000 ft, a descent was made in a clear air pocket up wind of the Trinidad Head (THD) site and the DC-8 then sampled air at 400 ft ASL to permit a comparison of DC-8 and surface aerosol measurements. Similar descent was also made over the Fresno Aeronet site. A heat soak experiment was conducted by flying at low-level (1000 ft) for 40 minute over Central California ranching country during the hot afternoon. No thermal problems were encountered and the DC-8 appears to be quite capable of extended boundary layer sampling. Over Central valley we encountered high nitric acid concentrations (> 3 ppb), as well as high concentrations of fine particles, SO2, and measurements of photosynthetic draw-down of CO2. On the way home the DC-8 sampled stratospheric air at 30 - 37000 ft that was well-forecast by RAQMS, observed by the ozone lidar, with in situ ozone mixing ratios reaching 340 ppb. It was possible to test instrument performance from 1000 to 39,000 ft under a variety of aircraft speeds as well as humidity and pollution conditions. It was confirmed that for indicated air speeds of 250 knots or more no sampling difficulties are encountered at any level by any of the instruments.

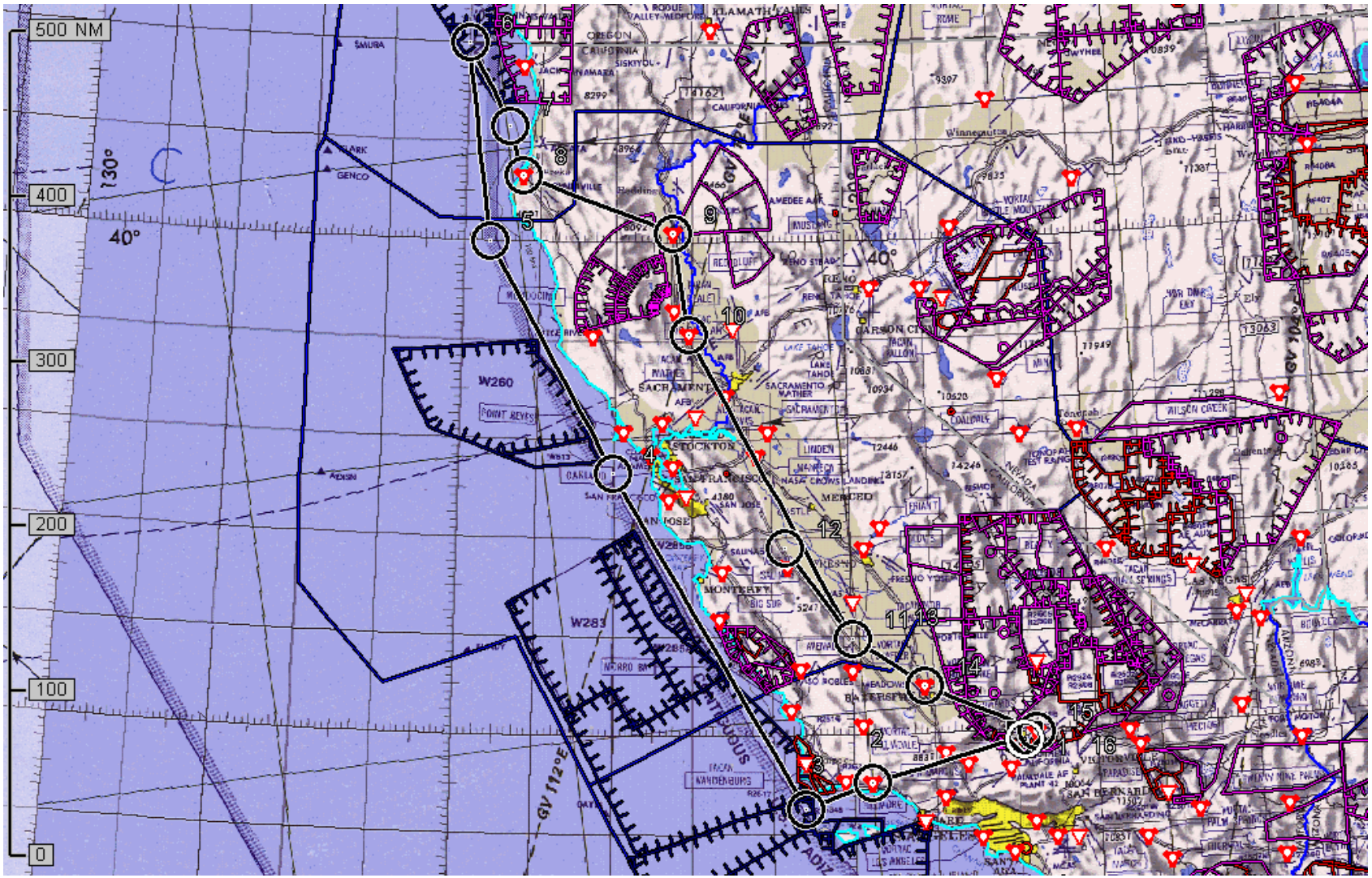
Several of the instruments (Lidar, O3, CO2, HNO3-UNH, GIT-CIMS, Caltech-CIMS etc) were able to operate normally while others encountered difficulties of varying degree of severity that are being addressed. It is possible that the GIT-LIF instrument will not come on line until after arrival in Mid-America. Overall, this was a very successful flight that accomplished both test and science objectives.

The navigational data from this flight is available on anonymous ftp site: ftp2.dfrc.nasa.gov
(directory incoming/icats)

INTEX June 29



INTEX June 29



Intex- June 29/2004

TYPE ACFT	CALL SIGN	DATE	FROM	TO	PLND TO	ACT TO	PILOT	COPILOT
DC-8	NASA817		EDWARDS AFB N 34 54.3 W117 53.0	EDWARDS AFB N 34 54.3 W117 53.0	17:00			

TOT DIST	TOT TIME	FUEL REQ	NAVIGATOR	ENGINEER
1395.3	05+41	59059		

TP DTD#	Fix/Point Description	FREQ	Latitude Longitude	Alt Wind	TAS GS	TC MC	LEG DIST DIST REM	LEG TIME TIME REM	ETA	RETA	ATA	REMARKS
1	KEDW/A EDWARDS AFB		N 34 54.3 W117 53.0	2302M		058 044	5.0 1390	00+02 05+39	17:00			
2	RZS/R SAN MARCUS	096X 114.90	N 34 30.6 W119 46.3	10000M	300 300	255 241	101.1 1289	00+20 05+19	17:22			
3	.PT03 GVO/R219030	085X 113.80	N 34 15.0 W120 35.0	10000M	300 300	249 235	43.2 1246	00+09 05+11	17:31			
4	.PT04 SAU/R227025	109X 116.20	N 37 40.0 W123 00.0	20000M	300 300	330 315	236.1 1010	00+46 04+24	18:17			
5	 FOT/R186044	087X 114.00	N 40 00.1 W124 39.0	20000M	300 300	331 315	159.9 850	00+32 03+52	18:49			
6	 CEC/R273036	027X 109.00	N 42 00.0 W125 00.0	20000M	300 300	352 336	120.9 729	00+24 03+28	19:13			
7	.PT06 FOT/R326031	087X 114.00	N 41 10.0 W124 25.0	1000M	N/A N/A	152 136	56.5 673	00+11 03+18	19:24			
	.delay 	087X 114.00	N 41 10.0 W124 25.0	1000M	240 240	152 136	0.0 673	00+50 02+28	20:14			
8	FOT/R FORTUNA	087X 114.00	N 40 40.3 W124 14.1	10542M	N/A N/A	164 148	30.8 642	00+05 02+23	20:19			
9	RBL/R RED BLUFF	104X 115.70	N 40 05.9 W122 14.2	39000M	420 420	111 095	97.8 544	00+15 02+08	20:34			
10	ILA/R WILLIAMS	091X 114.40	N 39 04.3 W122 01.6	39000M	420 420	171 155	62.4 482	00+09 01+59	20:43			
11	 AVE/R345019	118X 117.10	N 35 58.1 W119 58.2	39000M	420 420	152 137	210.3 271	00+30 01+29	21:13			

June 29-continued

TP DTD#	Fix/Point Description	FREQ	Latitude Longitude	Alt Wind	TAS GS	TC MC	LEG DIST DIST REM	LEG TIME TIME REM	ETA	RETA	ATA	REMARKS
	.delay	118X	N 35 58.1	30335M	N/A	152	0.0	00+25	21:38			
		117.10	W119 58.2		N/A	138	271	01+04				
12		073X	N 36 54.0	10000M	N/A	324	68.8	00+10	21:48			
	PXN/R339011	112.60	W120 48.0		N/A	310	203	+54				
13		118X	N 35 58.1	10000M	250	144	68.8	00+17	22:04			
	AVE/R345019	117.10	W119 58.2		250	130	134	+37				
14	EHF/R	101X	N 35 29.1	10000M	250	124	51.5	00+12	22:17			
	SHAFTER	115.40	W119 05.8		250	110	82	+25				
15	EDW/R	111X	N 34 58.9	5000M	300	114	73.5	00+15	22:31			
	EDWARDS	116.40	W117 44.0		300	100	9	+10				
16	KEDW/A		N 34 54.3	2302M		238	8.8	00+10	22:41			
	EDWARDS AFB		W117 53.0			225	0	+00				